

VII. *Some Account of Cretinism.* By Henry Reeve, M. D. of Norwich. Communicated by William Hyde Wollaston, M. D. Sec. R. S.

Read February 11, 1808.

FELIX PLATER, in one of his observations, gives the history of a species of mental imbecility, which he saw in passing through the village of Bremis in the Valais. Cretinism, a word of uncertain derivation, is the name employed by the inhabitants of Switzerland to denote this disease, which is endemial in several districts of that country. It had probably existed long in those parts; for PLATER mentions cretins as being very common both in the Valais and in Carinthia, but the peculiar marks of these wretched beings were not generally known before he described them.* Mons. DE SAUSSURE has furnished the most minute and accurate account both of the appearances of the disorder, and of the circumstances which seem to produce it; and Mr. COXE and several travellers have noticed the symptoms of cretinism, without adducing any satisfactory explanation of the causes to which it may be ascribed. MALACARNI of Turin and Professor ACKERMANN have given a very accurate description of several cretins that they dissected; and besides some detached essays by different authors, a very full account of this malady is to be found in

* F. PLATERI *Praxeos Medica*, Cap. III. Basil. 1656.

an “*Essai sur le Goitre et Cretinisme par M. FODERE,*” published at Paris in 1800.

My curiosity led me some time ago to inquire more particularly into the nature and causes of cretinism, because it is usually connected with goitre, or bronchocele; I was indeed led to this inquiry, partly by the hope of discovering some function for the thyroid gland, more satisfactory than what is commonly alledged; but in these expectations I have been disappointed.

In the summer of 1805, I had an opportunity of seeing several cretins at Martigny and Sion, and other villages in the Valais; and I was glad to compare what had been written upon that subject, with what my own observation could suggest. By inquiries on the spot, I intended to learn what connection subsisted between weakness of the intellectual faculties and the swelling of the thyroid gland: what were the moral and physical circumstances which could influence the condition of the inhabitants, so as to make idiocy so prevalent; and what were the most efficient modes of relief. The following results I beg leave to lay before the Royal Society.

Cretinism is found not only in the vallies of the Alps, both on the French and Italian side of these mountains, but in the mountainous parts of Germany and Spain; and it was observed in Chinese Tartary by Sir GEORGE STAUNTON, in a part of that country much resembling Switzerland and Savoy in its alpine appearance. The enlargement of the thyroid gland called goitre, is the most striking feature in the unsightly aspect of a cretin; but this is not a constant attendant. His head also is deformed, his stature diminutive, his complexion sickly, his countenance vacant and destitute of meaning, his

lips and eye-lids coarse and prominent, his skin wrinkled and pendulous, his muscles loose and flabby. The qualities of his mind correspond to the deranged state of the body which it inhabits; and cretinism prevails in all the intermediate degrees, from excessive stupidity to complete fatuity.

At a small village, not far distant from Martigny, I examined four cretins. One lad, twelve years old, could speak a few words; he was of a weak and feeble frame, silly, but had no goitre. Another boy, nine years old, was deaf and dumb, idiotic, with no goitre, the only child of his mother, who has a large goitre which affects her respiration and her voice, though in other respects she is intelligent and well formed, and the father enjoys good health; they are not natives of this place. I saw a family in which all the children were cretins; the eldest died a year ago, a miserable object; the second, a girl, twelve years old, is deaf and dumb and cross-eyed, and has a monstrous goitre, with just intelligence enough to comprehend a few natural signs; the third, is a boy six years old, small and feeble, abdomen enlarged, no goitre, very feeble in mind and body, not entirely deficient in understanding; the mother had a moderate sized goitre, but was quite free from any mental affection; the father neither goitrous nor stupid, but of a delicate constitution.

There is no necessary connexion between goitre and cretinism, notwithstanding the assertions and ingenious reasoning adduced by FODERE. It is probable, the one has been assumed as the cause of the other, from the enlargement of the thyroid gland being a frequent occurrence in cretins; and as it forcibly strikes the observer from the deformity it occasions, this strong impression may have converted an accidental,

though frequent occurrence, into a general and necessary cause. Cretinism is frequently observed without any affection of the thyroid gland, and that gland is often very much enlarged without any affection of the intellectual faculties. There seems to be some similarity between cretinism and rickets, as they both take place in infancy, are both characterized by feebleness of body, and sooner or later by feebleness of mind, and they both affect males and females equally ; but there is no sort of connexion between persons afflicted with bronchocele in England, and with rickets. For although it might be granted, that there is some delicacy of frame in females about the period of pubescence when bronchocele usually occurs, yet neither irregular formation of the bones, nor weakness of the intellectual powers, are common symptoms attending bronchocele in Britain.

To what peculiarities then, in the physical constitution of certain districts, are we to ascribe the production of this singular malady? SAUSSURE'S description of the Valais is exceedingly precise and accurate, and the causes which he has alledged appear sufficient to account for the phenomena. The vallies where cretinism is most frequent, are surrounded by very high mountains ; they are sheltered from the currents of air, and exposed to the direct and still more to the reflected rays of the sun. The effluvia from the marshes are very strong, and the atmosphere humid, close, and oppressive. All the cretins that I saw, were in adjoining houses, in the little village called La Batia, situated in a narrow corner of the valley, the houses being built up under ledges of the rocks, and all of them very filthy, very close, very hot, and miserable habitations. In villages situated higher up the mountains,

no cretins are to be seen, and the mother of one of the children told me, of her own accord, without my asking the question, that her child was quite a different being when he was up the mountain, as she called it, for a few days.

The production of cretinism, by the bad quality of the air and the food, the neglect of moral education, and other evils attendant upon poverty, is supported by facts so pointed, that the greater number of cases in mountainous districts where snow-water abounds, may safely be ascribed to these general causes. The notion of snow-water being the cause of goitre, and consequently of cretinism, seems to have been derived from PLINY (Lib. II. cap. 37,) and copied by almost every succeeding writer, because it coincided with their hypotheses of cold and crude matters, although directly contradicted by facts. In the first place, persons born in places contiguous to the glaciers, who drink no other water than what flows from the melting of ice and snow, are not subject to this disorder; and, secondly, the disorder is observed in places where snow is unknown.

The theory of water impregnated with calcareous matter being the cause, is equally unfounded; because the common waters of Switzerland excel those of every other country in Europe for purity and flavour. There is not a village, nor a valley, but what is enlivened by limpid rivulets or streams gushing from the rocks. The water usually drank at La Batia and Martigny is from the river Dranse, which flows from the glacier of St. Bernard, and falls into the Rhone; it is remarkably free from earthy matter, and well tasted. At Martigny, there are two or three pumps, the water of which is pure and equally fit for culinary purposes, but said to be

unwholesome, without any good reason. At Bern, the water is extremely pure, yet, as HALLER remarks, swellings of the throat are not uncommon in both sexes, although cretinism is rare. With regard to the alledged causes of goitre, the general opinion of its being endemial in mountainous countries, is of no value, because the disease is rare in Scotland, and very common in the county of Norfolk.

The causes of cretinism begin to operate upon the system soon after, perhaps even before birth; the want of energy in the parent is communicated to the offspring; the children become deformed and cachectic very early in life, the growth and developement of the body is impeded, the abdomen becomes enlarged, and the glands swelled in various degrees; and the powers of the mind remain dormant, or become entirely obliterated, partly from want of proper organization, and partly from the total neglect of every thing like education.

It might be expected, that the dissection of cretins would throw some light upon the series of phenomena associated together in the origin and progress of this singular affection; but the people are so superstitious, that it is very difficult to procure bodies for anatomical examination. However, some dissections have been made, and the appearances in the cranium are very curious. From the description of a cretin's skull by ACKERMANN, it appears that the cavity for the reception of the pons varolii and medulla oblongata was completely obliterated, and that in which the cerebellum is lodged so much diminished, that it scarcely exceeded one-third of its natural capacity. The return of the venous blood must have been considerably impeded by the mal-confirmation of the foramina.

Appearances nearly similar were observed by MALACARNI and by FODERE.

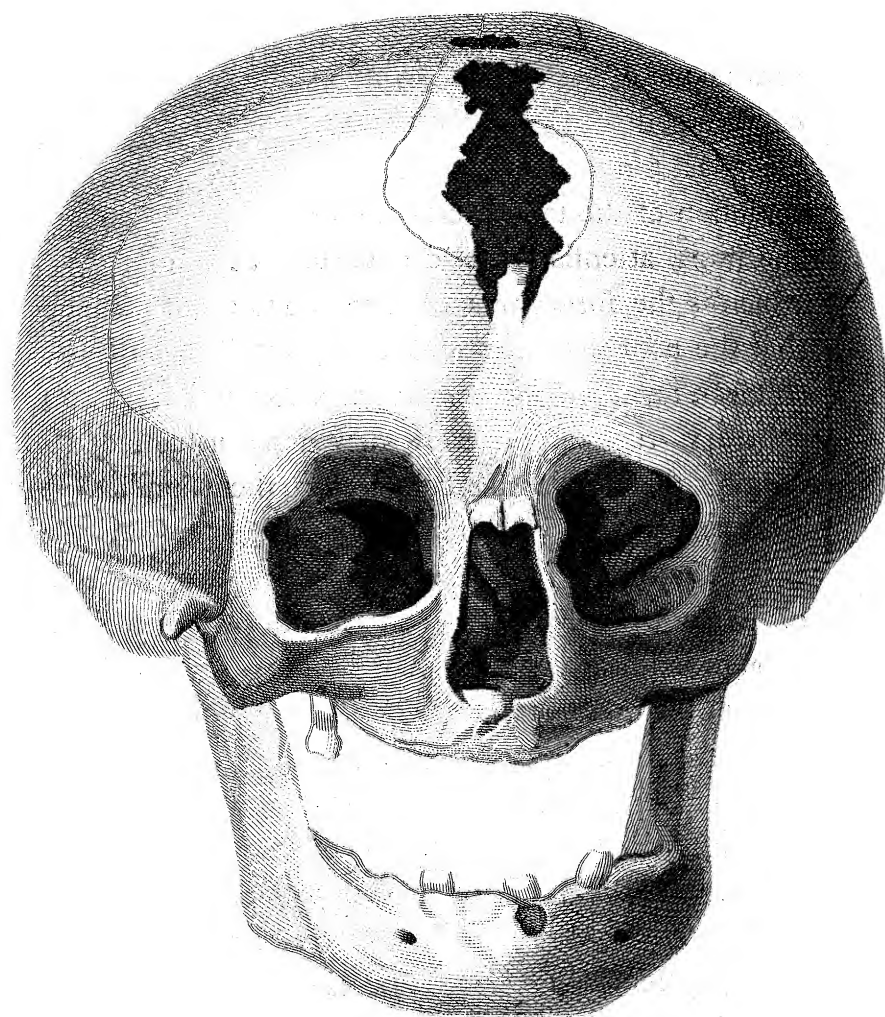
In the anatomical museum at Vienna, I saw a cretin's skull, from which Professor PROCHASKA was so obliging as to permit me to have two drawings taken. It is the cranium of a cretin, who died at the age of thirty, yet the fontanelle is not closed, the second set of teeth are not out of their sockets, and none of the bones are distinctly and completely formed. The head is very large, the face small; it is like the skull of an adult joined to the face of a child; every part bears marks of irregularity in the growth and formation; and irregular action must have been the concomitant of such a morbid structure, whether the appearances be considered as cause or effect.

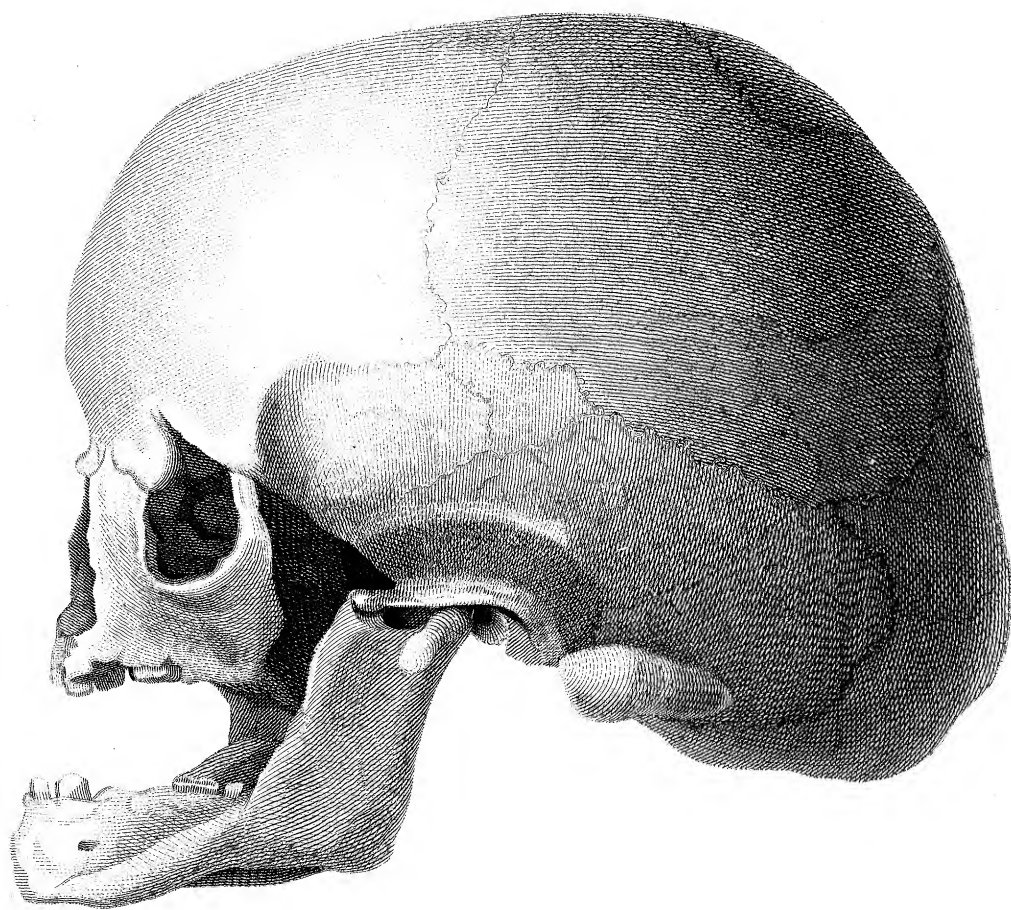
The four angles of the os malæ are not well defined; the zygomatic and maxillary processes of this bone are wanting; the nasal processes of the superior maxillary bone are very large, and exhibit no marks of union with the os malæ; the ossa nasi are very small; the temporal bone is imperfectly formed; the zygomatic process terminates at the coronoid process of the lower jaw; the mastoid and styloid processes are wanting, and the pars petrosa remarkably small; the squamous portion not distinctly marked; the os occipitis unusually large, and numerous additional bones, ossa triquetra, along the whole course of the lambdoid suture. These appearances will be readily seen by referring to the figures; the other deviations of the natural structure corresponded with those already described by different writers.

There is no fact in the natural history of man, that affords an argument so direct and so impressive, in proof of the in-

fluence of physical causes on the mind, as cretinism. It shows moreover, that the growth of every part is essentially connected with the conditions in which it is fit to exercise its peculiar functions; and in this respect, it fares with the intellectual as with the bodily powers.

The most decisive argument in proof of this opinion is, that cretinism may be prevented by removing children from the confined and dirty places where it prevails, and nursing and educating them in the higher parts of the mountains. Within these last ten years, the number of cretins has diminished, the condition of the lowest class of society is somewhat bettered, and more attention is paid towards that diseased constitution which is the forerunner of mental imbecillity. I did not find that the poor creatures took any pride in having any of their children idiots or *bien heureux*, as some authors assert; on the contrary, the parents were very much ashamed of acknowledging that any cretins belonged to their families; and it was after repeated attempts, only by declaring myself to be a physician, that I could get access into their houses to examine any of these wretched beings in the human form. The burnt sponge is known as a remedy for the goitre among the people where it is most prevalent; but it is seldom administered, because the disease is so common, that it does not attract notice, nor affect in general the ordinary functions of life. And as to cretinism, that seems to be looked upon as belonging to indigence and poverty; for in every place where I saw cretins, many well looking persons of both sexes resided, and these were, without exception, persons of a higher class in society, who lived in better houses, and could supply both their moral and physical necessities.





I might perhaps have insisted more upon the analogy between cretinism and rickets, for there is a remarkable coincidence in the literary history of these two diseases, as well as in many other points. GLISSON first described rickets, as it appeared in this country, in the middle of the seventeenth century, about the same time that PLATER mentions cretinism. The origin of both names is equally obscure; and since some of the remote causes are now discovered, it is to be hoped the diseases themselves will gradually disappear, and in some happier age be known only by description.